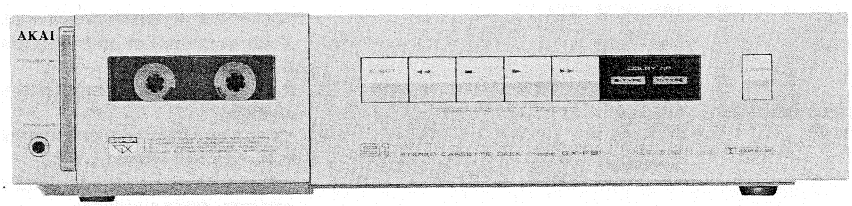
GX-F91

STEREO CASSETTE DECK

Notes:	* Cassette tape in photograph not included in standard accessories. * This manual is applicable to both silver and pearl shadow panel models.
Remarques:	* La bande de cassette sur la photo n'est pas comprise dans les accessoires standard. * Ce manuel s'applique aussi aux modèles avec panneaux argent et gris perle.
Opmerkingen:	* De in de foto's afgebeelde cassettes behoren niet tot het standaardtoebehoren. * Deze gebruiksaanwijzing is van toepassing op modellen met zilver en parel-grijs paneel.
Anmärkningar:	* Kassettbandet på bilden hör inte till standard tillbehören. * Bruksanvisningen gäller både för modellen med silverpanel och modellen med pärlgrå panel.
Anmerkungen:	* Die Cassette im Bild gehört nicht zum Standardzubehör. * Diese Betriebsanleitung gilt auch für die Ausführung mattsilber und perlschattenfarbig.
Notas:	* La cinta casete mostrada en la fotografía no está incluída como accesorio estándar. * Este manual cubre ambos modelos, el de panel plateado y el de panel color perla obscura.



WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Operator's Manual
Manuel de l'utilisateur
Gebruiksaanwijzing
Bruksanvisning
Bedienungsanleitung
Manual del usuario

AKAI

ENGLISH

WARNING

POWER REQUIREMENTS

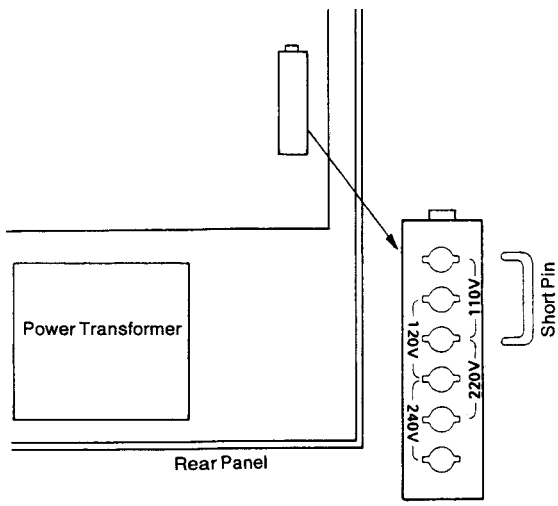
Power requirements for electrical equipment differ from area to area. Please ensure that your machine meets the power requirements in your area.
If in doubt, consult a qualified electrician.
120V, 60 Hz for USA and Canada
220V, 50 Hz for Europe except UK
240V, 50 Hz for UK and Australia
110V/120V/220V/240V, 50/60 Hz internally switchable for other countries.

VOLTAGE CONVERSION

Do Not Attempt This Conversion Yourself.

Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required. If your machine's voltage can be converted, refer the following voltage conversion to a qualified Service Repair Shop or professional service personnel.

1. Disconnect the power cord.
2. Loosen the holding screws of the top panel and the two top screws of the rear panel and remove the top panel.
3. Remove the short pin plug from the present holes and replace in the correct holes. Follow the markings explicitly.



PRECAUTIONS

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

- The lightning flash with arrowhead symbol superimposed across a graphical representation of a person, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.
- The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Use only household AC power sources.
   Never use DC power sources.
2. Always set the amplifier's volume control to minimum when turning on or off the deck.
3. Touching the plug with wet hands risks dangerous electric shocks. Always pull out by the plug and never the cord.
4. Make sure the power consumption of each audio component does not exceed wattage specified on the rear panel.
   Only connect other audio components.
5. Only let a qualified professional repair or reassemble the equipment. An unauthorized person might touch the internal parts and receive a serious electric shock.
6. Never allow a child to put anything, especially metal into this equipment. A serious shock or malfunction may occur.
7. If water is spilled on this equipment, disconnect and call your dealer.
8. Make sure the equipment is well ventilated and away from direct sunlight.
9. Keep away from heat (stoves, etc.) to avoid damage to the external surface and internal circuits.
10. Avoid spray-type insecticides which will damage the equipment and may ignite suddenly.
11. To avoid damaging the finish never use alcohol, paint thinner or others similar chemicals.
12. Always place the equipment on a flat and solid surface.
13. Please read this manual in its entirety and keep it handy for further reference.

This equipment confirms to No. 76/889/EEC standard.

DEW FORMATION

Dew is the term used for the formation of moisture on the very important transport section such as the head and the capstan when the deck is used in places where humidity is high, subjected to sudden changes in temperature or moved from a cold place to a warm one. If the deck is used when dew is present, the tape will stick to the head and be ruined or it will not be transported properly. In such cases, do not use the deck for approximately one hour until the deck is acclimatized.

PLACEMENT

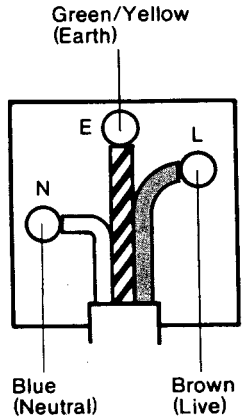
If the deck, tuner and amplifier are placed on top of each other, humming noise may result during playback. Also beat noise may result during recording of AM broadcasts. In such cases, change the position of the deck. Akai recommends that a space the size of an amplifier be placed between the deck and the tuner or the amplifier.

FOR CUSTOMERS IN THE UK

IMPORTANT FOR YOUR SAFETY

The flex supplied with your machine will have either two wires or three as shown in the illustrations.

THREE CORE FLEX
WARNING
THIS APPARATUS MUST BE EARTHED
IMPORTANT



The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow: Earth
Blue: Neutral
Brown: Live

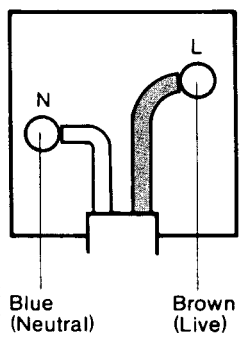
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or coloured green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

TWO CORE FLEX
IMPORTANT



The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

* Do not connect any wire to the larger pin marked E or ⏚ when wiring a plug. Ensure that all terminals are securely tightened and that no loose strands of wire exist.

FOR CUSTOMERS IN AUSTRALIA

If your machine comes with a three core power cord, FOR YOUR SAFETY.

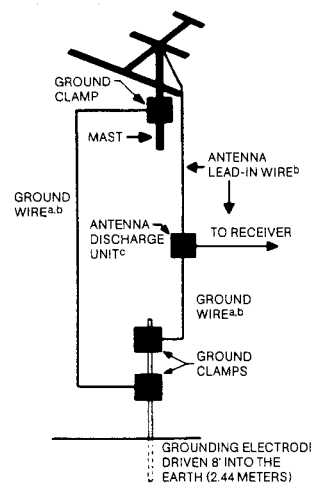
1. Insert this plug only into an effectively earthed three-pin plug socket outlet.
2. If any doubt exists regarding the earthing, consult a qualified electrician.
3. Extension cords, if used, must be three core correctly wired.

FOR CUSTOMERS IN THE U.S.A.

SAFETY INSTRUCTIONS

1. **Read Instructions** — All the safety and operating instructions should be read before the equipment is operated.
2. **Retain Instructions** — The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** — All warnings on the equipment and in the operating instructions should be adhered to.
4. **Follow Instructions** — All instructions for operating and use should be followed.
5. **Water and Moisture** — The equipment should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. **Carts and Stands** — The equipment should be used only with a cart or stand that is recommended by Akai.
7. **Wall or Ceiling Mounting** — Akai does not recommend mounting the equipment on a wall or a ceiling.
8. **Ventilation** — The equipment should be situated so that its location or position does not interfere with its proper ventilation. For example, the equipment should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** — The equipment should be situated away from heat sources such as radiators, heat registers, stoves, or other equipments (including amplifiers) that produce heat.
10. **Power Sources** — The equipment should be connected to a power supply only of the type described in the operating instructions or as marked on the equipment.
11. **Grounding or Polarization** — The precautions should be taken so that the grounding or polarization means of an equipment is not defeated.
12. **Power-Cord Protection** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the equipment.
13. **Cleaning** — The equipment should be cleaned only as recommended by the manufacturer.
14. **Power Lines** — An outdoor antenna should be located away from power lines.
15. **Outdoor Antenna Grounding** — If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70—1981, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 1.
16. **Nonuse Periods** — The power cord of the equipment should be unplugged from the outlet when left unused for a long period of time.
17. **Object and Liquid Entry** — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
18. **Damage Requiring Service** — The equipment should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the equipment; or
    C. The equipment has been exposed to rain; or
    D. The equipment does not appear to operate normally or exhibits a marked change in performance; or
    E. The equipment has been dropped, or the enclosure damaged.
19. **Servicing** — The user should not attempt to service the equipment beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FIGURE 1
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS

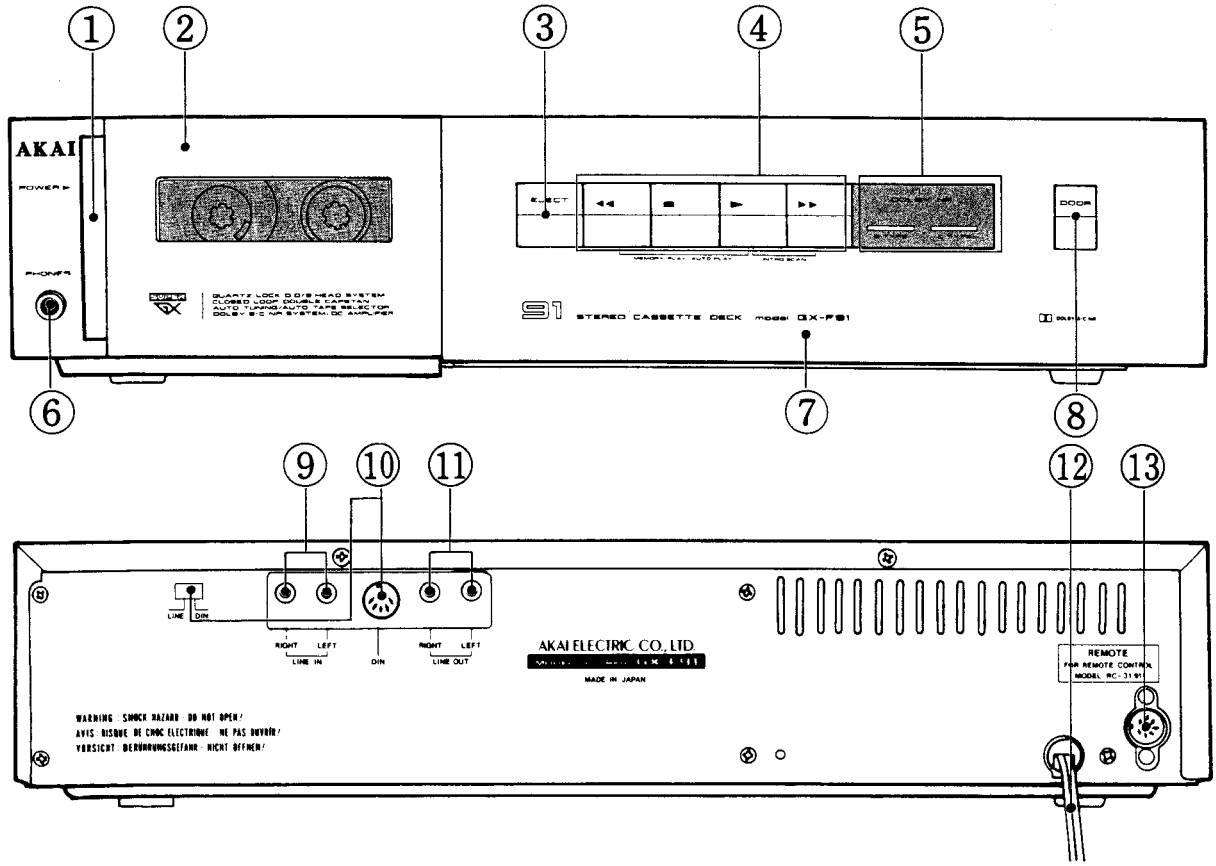


a
Use No. 10 AWG (5.8 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as ground wire.

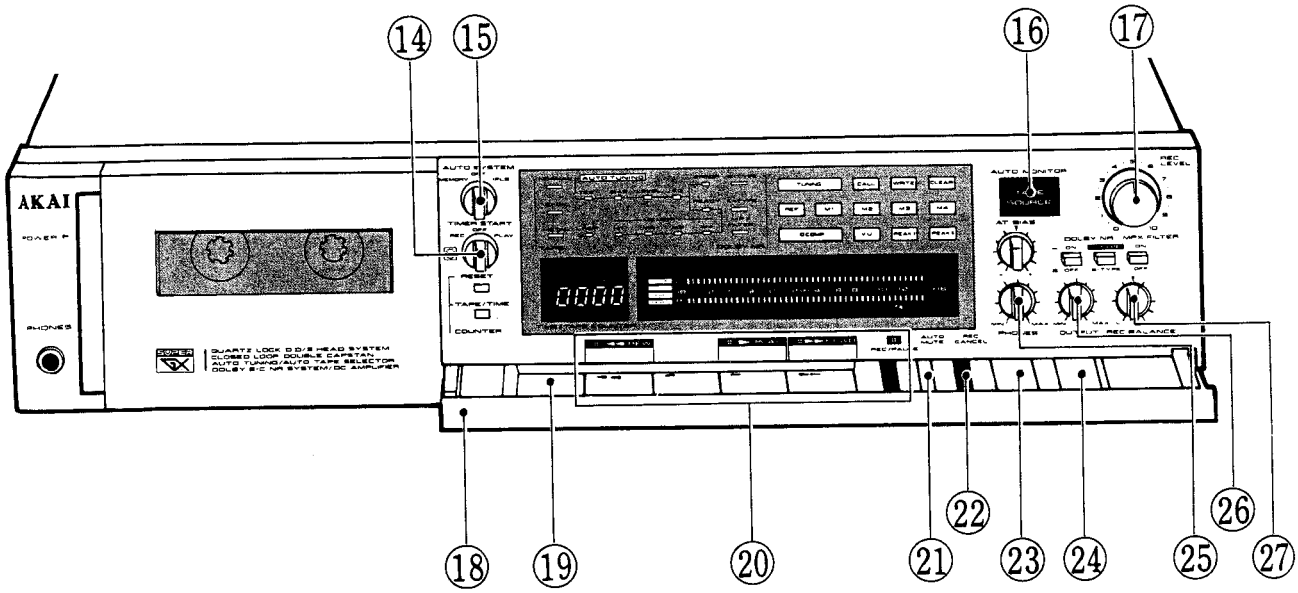
b
Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 m) to 6 feet (1.83 m) apart.

c
Mount antenna discharge unit as close as possible to where lead-in enters house.

CONTROLS



1. **POWER Switch**
   Depress the switch to turn on the power and depress again to turn off the power. Depress only the upper part of the switch (near the word POWER).
   * For stable timer operation, after turning on the power please allow about 5 seconds to elapse before depressing an operating button.
2. **Cassette Receptacle**
   Depress the EJECT button to open the Cassette Receptacle. Depress any of the Operating buttons and the Cassette Receptacle will close and the GX-F91 will go into whichever mode was depressed.
   * If a cassette tape is not loaded properly, it will be ejcted.
   * If there is any tape slack, it will be taken up automatically after the Cassette Receptacle is closed.
   * If the Cassette Receptacle is left open when the power is turned off, it will be closed automatically when the power is turned on.
   * Do not place any object in front of the Cassette Receptacle.
   * During transportation, the Cassette Receptacle's lid might have moved slightly out of place. This can be easily corrected by pushing the lid with your hands. The lid is properly attached when it is even with the front and top panels.
3. **EJECT Button**
   Cassette tape can be ejected directly from any mode.
   Since it is a power assisted eject system, it functions only when the GX-F91 is turned on.
4. **Operating Buttons with Indicators**
   Rewind (◀◀) Button
   Depress to rewind the tape.
   Depress along with the Play (▶) button for auto play or memory play operations.
   Stop (■) Button
   Depress to stop tape travel.
   Play (▶) Button
   Depress for playback.
   Fast Forward (▶▶) Button
   Depress to fast forward the tape.
   Depress along with the Play (▶) button for intro scan operation.
5. **DOLBY NR B-TYPE and C-TYPE Indicators**
   Lights depending on which Dolby NR system is engaged.
6. **Headphone (PHONES) Jack**
   Accommodates stereo headphones of 8 ohms impedance for private headphone listening.
7. **Control Panel Door**
   Operating buttons necessary for recording are on the other side of this door.
   * Attention: Do not turn off the GX-F91 while the door is opening or closing.
     Do not open or close the door with your hand.
     Such action might cause malfunction.
     Always use the DOOR button (one inside or one outside the control panel door).
8. **Opening DOOR Button**
   Depress to open the control panel door.
9. **LINE IN Jacks**
   Connect to the amplifier's output jacks for tape deck (TAPE REC jacks), or to the output jacks of another tape deck (LINE OUT jacks).
10. **LINE/DIN Selector and DIN Jack (Some models are not equipped with these facilities.)**
    DIN jack can be used instead of the LINE IN and OUT jacks for connection with an amplifier through a DIN connection cord.
    Set the selector according to the connection.
    LINE: Set to this position for input from the LINE IN jacks.
    DIN: Set to this position for input from the DIN jacks.
11. **LINE OUT Jacks**
    Connect to the amplifier's input jacks for tape deck (TAPE PLAY jacks), or to the input jacks of another tape deck (LINE IN jacks).
12. **Power Cord**
13. **REMOTE Jack**
    Connect the optional Remote Control Unit RC-31 or RC-91 to this jack for remote control operation.



14. TIMER START Selector
REC: Set to this position for absentee recording with a timer.
OFF: Set to this position for all other times when timer start operation is not to be engaged.
PLAY: Set to this position for timed playback with a timer.

15. AUTO SYSTEM Selector
MEMORY: Set to this position for memory playback or memory stop operation.
OFF: Set to this position and the GX-F91 will go into stop mode at the end of the tape.
IPLS: Set to this position for IPLS operation.

16. AUTO MONITOR Selector with Indicator
TAPE monitor: Indicator will light green.
To play back signals recorded on the tape.
SOURCE monitor: Indicator will light red.
To play back signals from the rear panel LINE IN jacks.

* During recording and playback modes, the AUTO MONITOR selector will be set automatically to TAPE and during recording standby mode, it will be set automatically to SOURCE.
* The just recorded signals can be compared to the source signals by setting the selector to and from TAPE and SOURCE.

17. Recording (REC) LEVEL Control
Use to adjust the recording input levels.

18. Control Panel Door

19. EJECT Button
Cassette tape can be ejected directly from any mode.
Since it is a power assisted eject system, it functions only when the GX-F91 is turned on.

20. Operating Buttons and Indicators
Rewind (◀◀) Button
Depress to rewind the tape.
Depress along with the Play (▶) button for auto play or memory play operations.
Stop (■) Button
Depress to stop tape travel.
Play (▶) Button
Depress for playback.
Fast Forward (▶▶) Button
Depress to fast forward the tape.
Depress along with the Play (▶) button for intro scan operation.
Recording (REC)/PAUSE Button
Depress to put the GX-F91 into recording standby mode.
Depress along with the Play (▶) button to put the GX-F91 into recording mode.

* The stop mode of GX-F91 is like the pause mode of conventional tape decks. The heads are still in contact with the tape while the pinch rollers are released. Therefore, to momentarily suspend tape travel during playback, depress the Stop (■) button and not the REC/PAUSE button. If the REC/PAUSE button is depressed, the GX-F91 will go into recording standby mode.

21. AUTO MUTE Button
Depress during recording to put the GX-F91 into no-signal mode. No recording will be made on the tape for 4 seconds.

22. Recording (REC) CANCEL Button
Depress this button during recording and the GX-F91 will rewind the tape to the beginning of the section that was being recorded and then go into recording standby mode after creating 4 seconds of blank space.

23. AUTO FADER Button
Fade-in recording: Depress this button at the beginning of recording to gradually increase recording input levels from zero to the normal level.
Fade-out recording: Depress this button at the end of recording to gradually decrease recording input levels from the normal level to zero.
When this button is depressed during recording standby, the GX-F91 will automatically go into fade-in recording. When this button is depressed during recording, the GX-F91 will go into fade-out recording, then create 4 seconds of blank space, then go into recording stadby mode.
Fade-in and fade-out recordings take place for approximately 4 seconds.

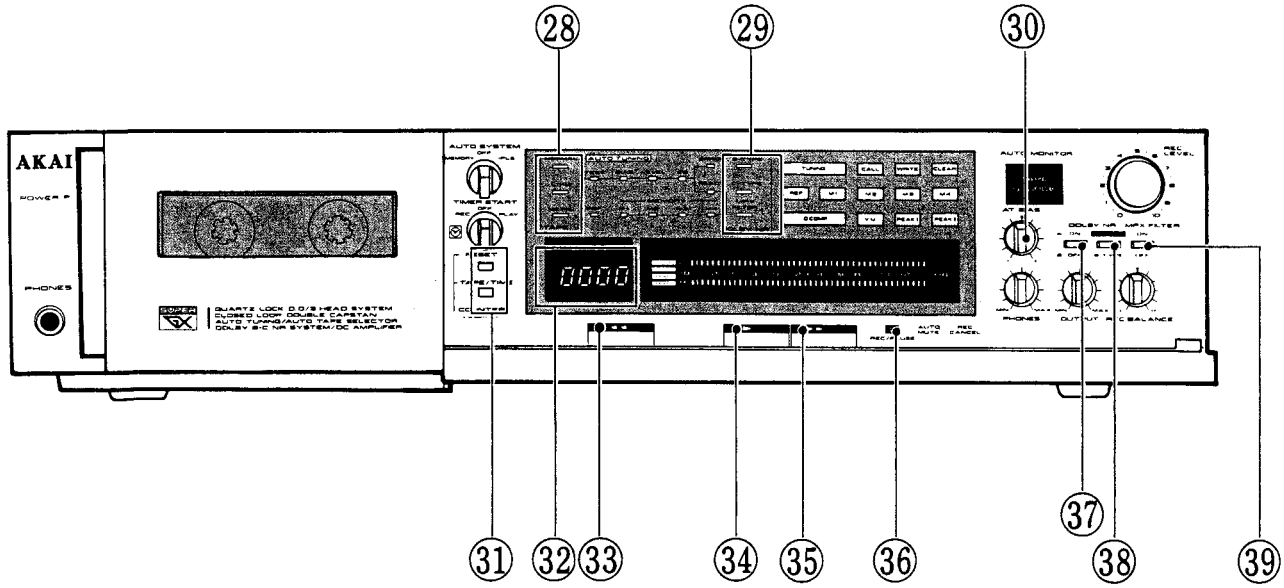
24. Closing DOOR Button
Depress to close the control panel door.

25. Headphone (PHONES) Control (MIN/MAX)
Use to adjust the headphone output level.

26. OUTPUT Control (MIN/MAX)
Use to adjust the line output level.

27. Recording (REC) BALANCE Control (L: left, R: right)
Use to adjust the balance of the left and right recording input levels.

CONTROLS



28. Tape Position Indicators
Interconnected with the auto tape selector. When a cassette tape is loaded, the indicator (NORMAL: Low noise or low noise high output, CrO_2: Chrome, or METAL: Metal) corresponding to the type of tape loaded will light.
At the same time, the amount of playback equalization will be set and furthermore the amount of recording bias, the recording sensitivity level and the amount of recording equalization will be set to Akai's reference values for the tape position.

29. DOLBY NR B-TYPE and C-TYPE FILTER Indicators
Lights depending on which Dolby NR system is engaged and whether the MPX filter is engaged.

30. Auto Tuning (AT) BIAS Control
Use to adjust the amount of recording bias and the recording headroom according to the source signals. When set to the centre click position, the amount of recording bias is set to Akai's reference value. The recording bias can be adjusted within ±14%.

'+' side: The recording bias is increased and the MML characteristics is improved.
* Maximum Modulation Level (MML) is the mid-frequency characteristics of tape centred around 1 kHz.

'—' side: The recording bias is decreased and the MOL characteristics is improved.
* Maximum Output Level (MOL) is the high frequency characteristics of tape centred around 10 kHz.

* This control has effect only during recording. Set this control before recording or auto tape tuning.

31. RESET Button and TAPE/TIME Selector
Use the TAPE/TIME selector to make the FL digital display indicate tape travel in minutes and seconds or in the conventional way. Depress the RESET button to reset the FL digital display to '0000'.

32. FL Digital Display
The display changes according to the TAPE/TIME selector. During recording or playback, set the display to indicate tape travel in minutes (MIN) and seconds (SEC). During auto system operations, set the display to indicate tape travel in the conventional way.

33. Rewind (◀◀ REW) Indicator

34. ▶ PLAY Indicator

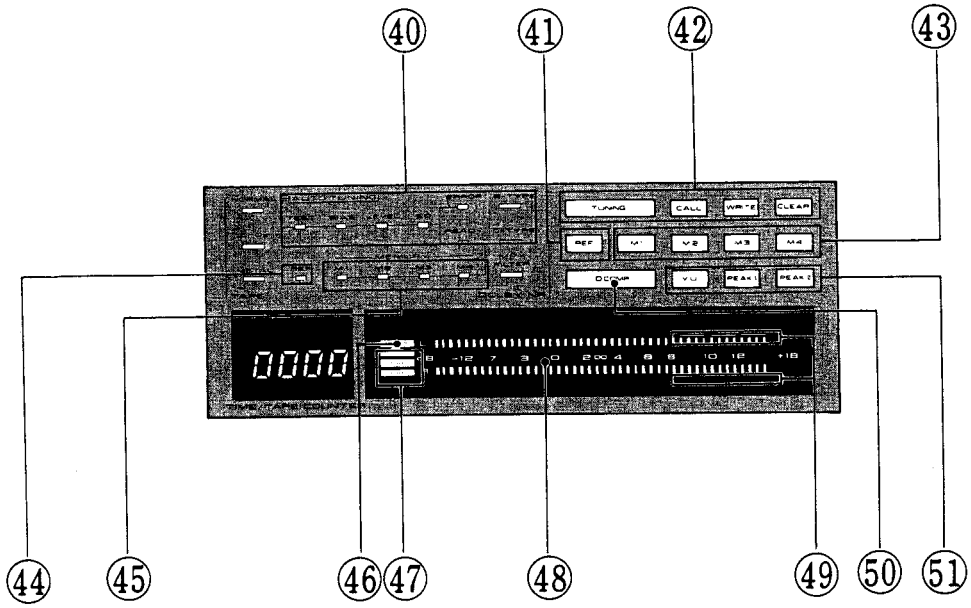
35. Fast Forward (▶▶ F.FWD) Indicator

36. REC/PAUSE Indicator

37. DOLBY NR Switch
ON (▬): To turn on the Dolby NR circuit.
OFF (▙): To turn off the Dolby NR circuit.

38. DOLBY NR Selector
C-TYPE (▬): For recording or playback with Dolby C-type NR.
B-TYPE (▙): For recording or playback with Dolby B-type NR.

39. MPX FILTER Switch
ON (▬): Set to this position when recording with Dolby NR (C-type or B-type) from FM stereo broadcasts.
OFF (▙): Set to this position for all other times.



40. Auto Tape Tuning Indicators

TEST: Flashes on and off during auto tape tuning.

BIAS: Flashes on and off when the amount of recording bias is being set.

LEVEL: Flashes on and off when the recording sensitivity level is being set.

EQ: Flashes on and off when the amount of recording equalization is being set.

ERROR: Flashes on and off when the tape is not within the adjustable range of the auto tape tuning system. While it is flashing, only the REF and the operating buttons will function when depressed.

READY: Lights when auto tape tuning is finished. You can now begin recording or memorize the tuning data (amount of recording bias, recording sensitivity level and amount of recording equalization).

* The READY indicator will go out when the REF or one of the memory indicators (M1 to M4) lights.

41. Reference (REF) Button

Depress this button and the tuning data (amount of recording bias, recording sensitivity level and amount of recording equalization) will be set to Akai's reference values.
When the ERROR indicator lights, depress this button to set the tuning data to Akai's reference values.

42. Auto Tape Tuning Control Buttons

TUNING: Depress to begin auto tape tuning. The leader tape section will be fast forwarded, then auto tape tuning will take place. Auto tape tuning will be completed in approximately 16 seconds.

* The tape will be fast forwarded only when there is a leader tape section.

CALL: Depress to recall memorized tuning data. Memory indicator (M1 to M4) corresponding to the memory recalled will flash on and off.

WRITE: Depress to memorize tuning data. Memory indicators M1 to M4 will flash on and off.

CLEAR: Depress to cancel memorized tuning data. Memory indicator corresponding to the memory canceled will flash on and off.

43. Memory Buttons (M1 to M4)

Depress to memorize or recall tuning data. Each memory can memorize 3 sets of tuning data: one for each tape position (normal, CrO_2 and metal).

44. Reference (REF) Indicator

Indicates that tuning data (amount of recording bias, recording sensitivity level and amount of recording equalization) are set to Akai's reference values.

45. Memory Indicators (M1 to M4)

Lights when tuning data (amount of recording bias, recording sensitivity level and amount of recording equalization) are set to memorized values.

46. D.COMP Indicator

Lights when the FL digital bar meter is compensated with the D.COMP system.

47. Meter Indicators

Indicate what the FL digital bar meter is showing.

VU: VU levels
PEAK I: Peak I
PEAK II: Peak II

48. FL Digital Bar Meter

Indicates the recording input levels and playback levels. 'L' is for the left channel and 'R' is for the right channel.

49. Maximum Input Level (MIL) Indicators

Interconnected with the auto tape selector. Indicate the Maximum Input Level of each tape position (NORMAL, CrO_2 or METAL).

50. D.COMP (Dynamic Range Compensation) Button

To compensate according to the MOL characteristics (i.e. dynamic range) of each tape position (NORMAL, CrO_2 or METAL) indicated on the FL digital bar meter and to observe more easily the recording input levels of high frequencies.

51. Meter Selectors

Use to set the FL digital bar meter according to the source signals.

VU: Depress to make the FL digital bar meter show VU levels.

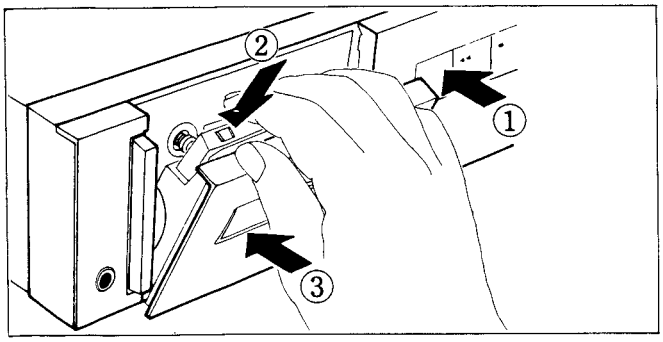
PEAK I: Depress to make the FL digital bar meter show peak levels with recovery time of approximately 1.5 seconds.

PEAK II: Depress to make the FL digital bar meter show peak levels with recovery time of approximately 1 second. The peak levels will be held for few seconds.

ENGLISH

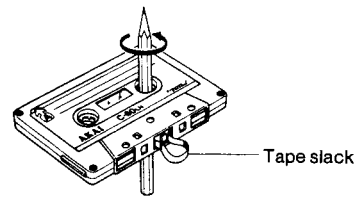
CASSETTE TAPE

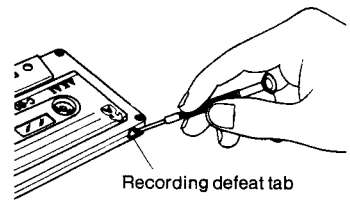
TAPE LOADING



1. Depress the EJECT button to open the cassette receptacle.
2. Insert the cassette with tape facing the heads.
3. Depress any of the Operating buttons to close the lid.

CASSETTE TAPE CARE





* Do not use cassette tape of inferior quality.
* Heads should be kept clean and demagnetized at all times.
* Before using a cassette tape, confirm whether tape slack exists. As tape slack causes the tape to twist or tangle around the pinch wheel and capstan, take up slack if necessary.
* Recording cannot be made on the leader tape. Therefore, when using a new cassette tape, be sure to forward the tape slightly so that the leader tape is not in the head path.
* Tapes which have been stored in a hot moist place for a period of time or cassette tape with bent cases should not be used. Such tapes may curl or have greasy places altering tape speed and preventing proper performance. Always store tapes in a cool, dry place.
* Do not touch the tape with your fingers as this will cause dropout (decrease in output).
* Cassette tapes are equipped with a break-out tab (recording defeat tab) for both A and B sides. When these tabs have been removed to protect an important recording, no further recording can be made on the tape unless the cavities are plugged or covered with a piece of tape.

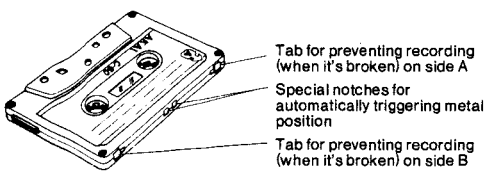
STANDARD REFERENCE AND RECOMMENDED TAPES

Types of Tape	Recommended Tapes	
Normal Position	AKAI	LN
	FUJI	FL, FX-I
	MAXELL	LN, UL, UD*, XL XLI, XLI-S
	SCOTCH	Dynarange Master I
	TDK	D, AD, OD
	BASF	LH, LH I
CrO_2 Position	TDK	SA*, SA-X
	FUJI	FX-II
	MAXELL	XLII, XLII-S
	SCOTCH	Master II
Metal Position	AKAI	MA*, MX*
	TDK	MA*, MA-R**
	MAXELL	MX
	FUJI	METAL
	SCOTCH	METAFINE

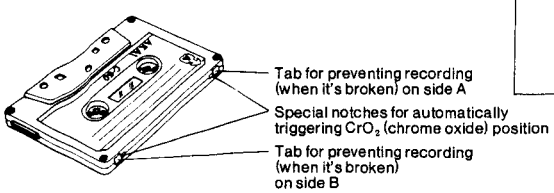
* C-60 tapes with this mark are the standard reference tapes.
** Do not use TDK MA-R cassette tapes which do not have special notches for automatically triggering metal position.

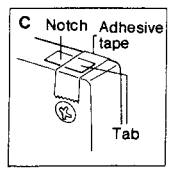
AUTO TAPE SELECTOR

A Cassette tape for metal position


Tab for preventing recording (when it's broken) on side A
Special notches for automatically triggering metal position
Tab for preventing recording (when it's broken) on side B

B Cassette tape for CrO_2 (chrome oxide) position


Tab for preventing recording (when it's broken) on side A
Special notches for automatically triggering CrO_2 (chrome oxide) position
Tab for preventing recording (when it's broken) on side B



When a tape is loaded, the indicator (CrO_2: Chrome, NORMAL: Low noise and low noise high output, or METAL: Metal) corresponding to the type of tape loaded will light. At the same time, the amount of playback equalization will be set and furthermore tuning data (amount of recording bias, amount of recording equalization and recording sensitivity level) will be set automatically to Akai's reference values.

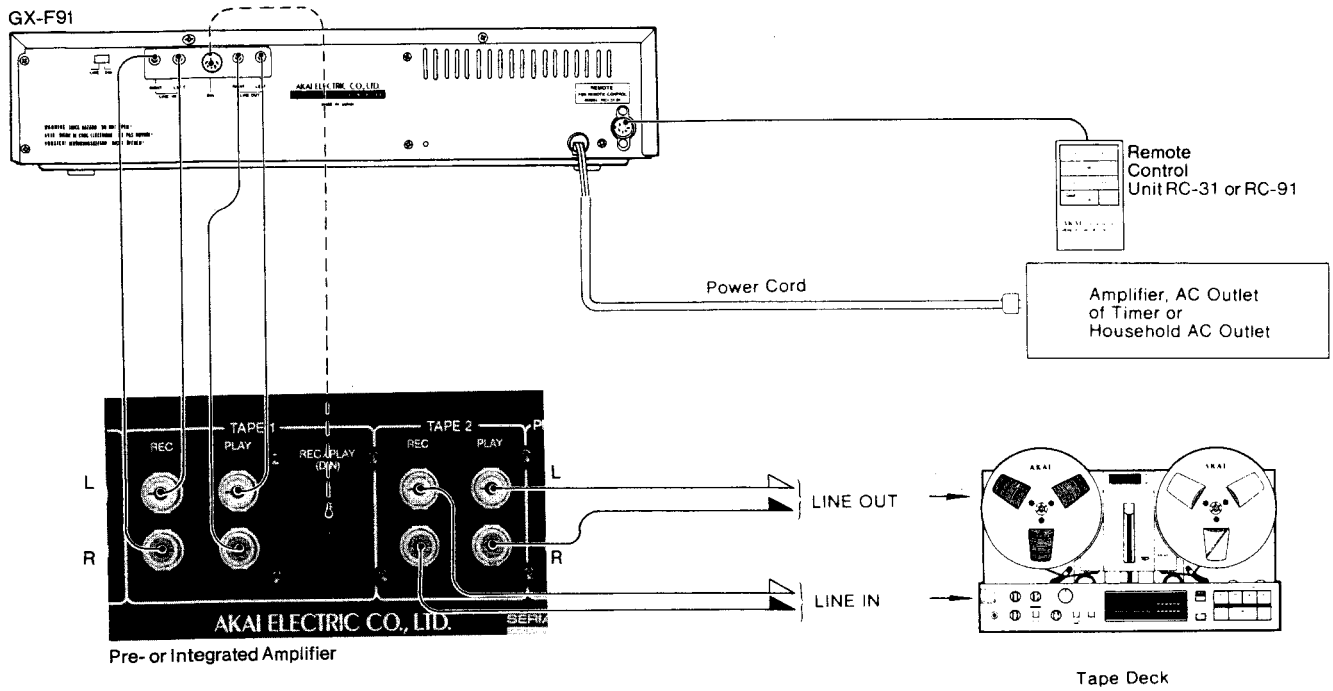
* After loading a cassette, confirm that the indicator lit corresponds to the type of tape written on the cassette.
* Chrome and metal position tape cassettes without notches for triggering their respective tape positions can not obtain good recording results with this deck. Use of ferri-chrome position tapes are not recommended.

CONNECTIONS

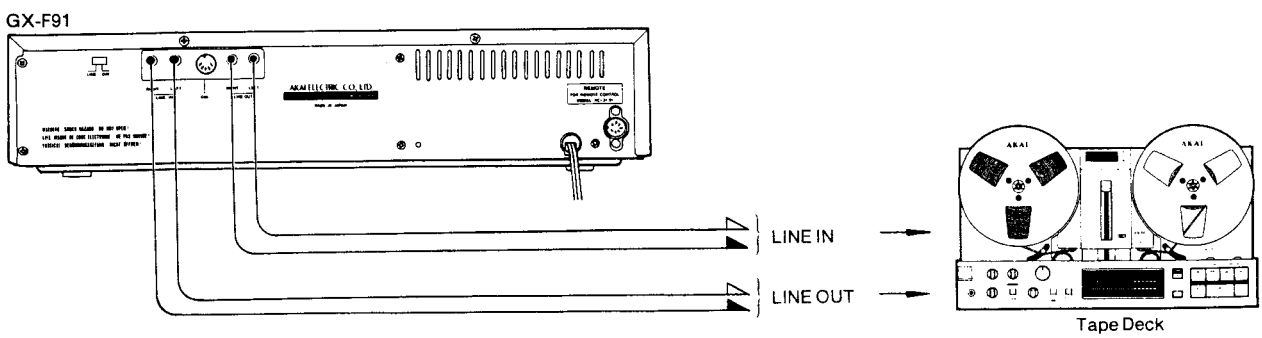
BASIC CONNECTION

- Adjust the LINE OUT output level with the OUTPUT control.

* Turn off all the components before connecting.
* To avoid cross-talk, do not operate the machine with input sources connected to both the LINE and DIN input jacks. (Disconnect plugs from inputs not being used prior to operation.)
* Set the LINE/DIN Selector according to connection.

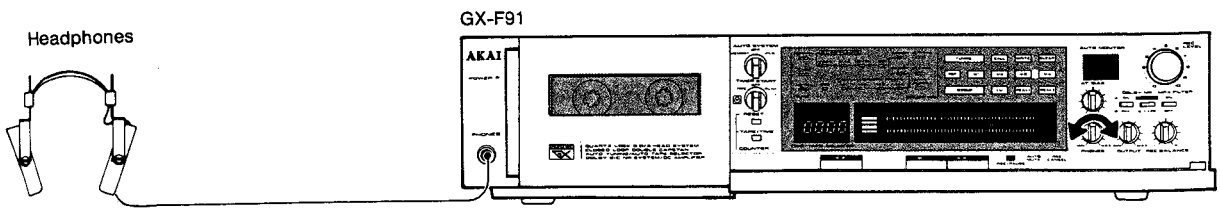


WHEN TAPE DUBBING (CONNECTING DIRECTLY TO ANOTHER DECK)



CONNECTING A PAIR OF HEADPHONES

- Adjust the headphone output level with the PHONES control.

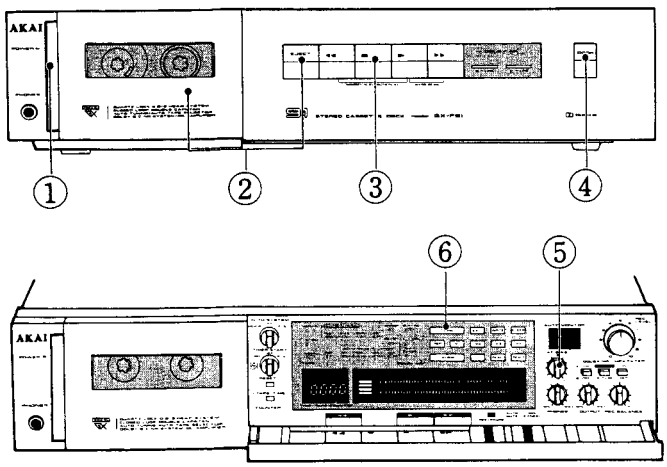


RECORDING

I. AUTO TAPE TUNING

Confirm before operation:

- All the components are properly connected.
- The TIMER START selector is set to OFF.
- The cassette tape's recording defeat tabs are not broken. If they are, cover the holes with pieces of adhesive tape.
- Best results are obtained with a new tape listed on the STANDARD REFERENCE AND RECOMMENDED TAPES on page 7.
- The cassette tape must have special notches for triggering its tape position.

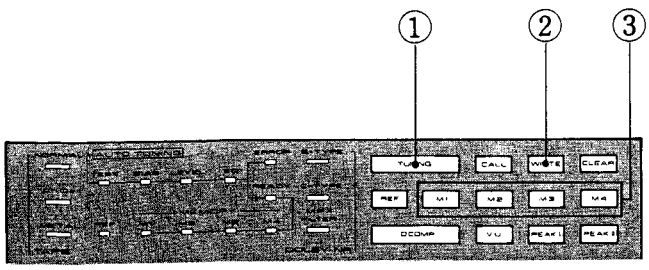


Auto tape tuning brings out the full characteristics of the tape and enables the auto tape tuning bias system and the Dolby NR system to perform at their best.

1. Depress the POWER switch to turn on the power.
2. Depress the EJECT button and load a cassette tape.
3. Depress the Stop (■) button to close the cassette receptacle.
4. Depress the Opening DOOR button to open the control panel door.
5. Adjust the AT BIAS control according to the source signals.
   '+' side: Turn to this side when the source signals have frequencies distributed mostly in the middle range, or to improve the mid-frequency headroom.
   '—' side: Turn to this side when the source signals have frequencies distributed mostly in the high range, or to improve the high frequency headroom.
6. Depress the TUNING button.
   The TEST indicator will flash on and off. After approximately 16 seconds auto tape tuning will be completed and the READY indicator will light.

- The tuning data are retained when the cassette tape is flipped over to the other side. And the READY indicator will light when the GX-F91 is put into the recording mode. However, if another cassette tape with different tape position is used, the tuning data will be set to Akai's reference values and the REF indicator will light.
- If the ERROR indicator flashes on and off after auto tape tuning, use another tape or reperform auto tape tuning. If the ERROR indicator lights again, depress the REF button and follow the BASIC RECORDING procedure on page 10.

A) TO MEMORIZE TUNING DATA

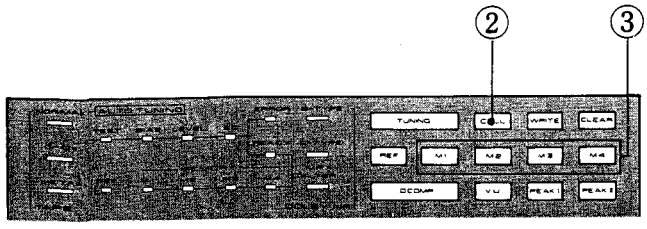


The memorized tuning data are retained in the tuning memory even when the power is cut. By memorizing tuning data, you can shorten the preparation time for recording or for absentee recording. Up to 3 sets of tuning data can be memorized in each memory, one for each tape position. Beside the 12 sets of tuning data, the last tuning data obtained will be remembered when the GX-F91 is turned on again.

1. Perform auto tape tuning as outlined in I. AUTOTAPE TUNING.
   After approximately 16 seconds, the READY indicator will light.
2. Depress the WRITE button.
   The memory indicators M1 to M4 will flash on and off.
3. Depress the memory button (M1, M2, M3 or M4) into which you want to memorize the tuning data.
   The READY indicator will go out and the memory indicator corresponding to the memory button depressed, will light.

- Perform the above for each tape position.
  * If more than one set of tuning data for a particular tape position is input into the same memory, only the last tuning data will be memorized.
- Memorize only when the tape has stopped traveling.
- The READY indicator must light before tuning data can be memorized.

B) TO RECALL MEMORIZED TUNING DATA

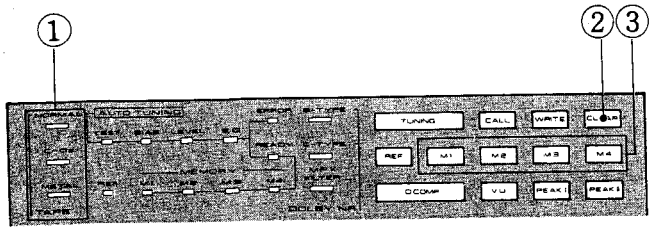


Perform this operation when you want to recall memorized tuning data before recording.

1. Load a cassette tape.
2. Depress the CALL button.
   Memory indicators which contain tuning data will flash on and off.
3. Depress the memory button containing the desired tuning data. The memory indicator corresponding to the memory button depressed will light and the auto tape tuning system will be set to the tuning data chosen.

- If you make a mistake, repeat the above procedure.

C) TO CANCEL MEMORIZED TUNING DATA

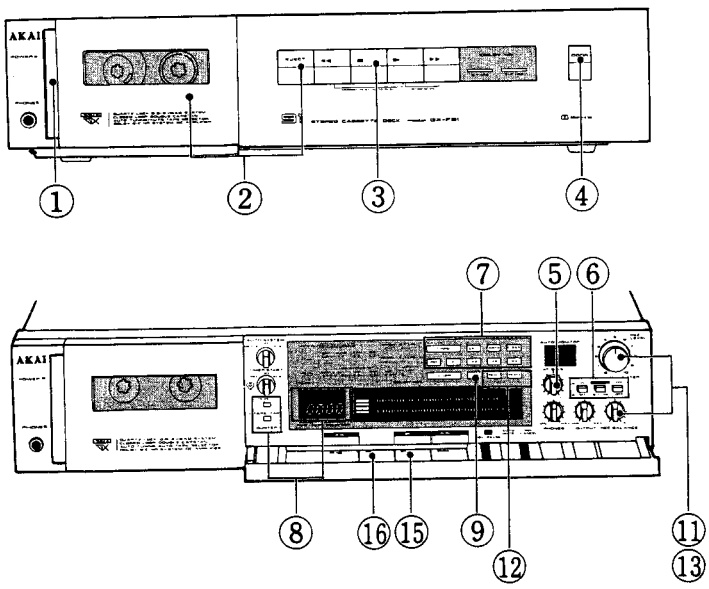


To cancel memorized tuning data:

1. Load a cassette tape with tape position corresponding to the tuning data to be erased. For example, if the tuning data are for CrO_2 tape, load a cassette tape with notches for triggering CrO_2 position.
2. Depress the CLEAR button.
   Memory indicators which contain tuning data will flash on and off.
3. Depress the memory button containing the tuning data to be canceled. The REF indicator will light and the auto tape tuning system will be set to Akai's reference values.

- If you make a mistake, depress the REF button and repeat the procedure.

II. BASIC RECORDING



1. Depress the POWER switch to turn on the power.
2. Depress the EJECT button and load a cassette tape.
3. Depress the Stop (■) button.
4. Depress the Opening DOOR button to open the control panel door.
5. Adjust the AT BIAS control according to the source signals.
6. If recording with Dolby NR is desired:
   a) Turn ON (▬) the DOLBY NR switch.
   b) Select the type of Dolby NR desired: C-TYPE (▬) or B-TYPE (▮).
   * The use of C-TYPE NR results in greater improvement in S/N than the use of B-TYPE NR.
   c) If recording from FM stereo broadcast, turn ON (▬) the MPX FILTER switch.
7. Set the tuning data for the tape position by performing auto tape tuning or by recalling memorized tuning data.
   * If recalling memorized tuning data, depress the REC/PAUSE button to put the GX-F91 into recording standby mode.
8. Set the digital display to show tape travel in minutes and seconds or in the conventional way with the TAPE/TIME selector. Depress the RESET button to reset to '0000'.
9. Depress the VU button to set the FL digital bar meter to indicate VU levels.
   * The VU indicator will light.
10. Play back the source equipment.
11. Adjust the REC BALANCE and the REC LEVEL controls so that the VU levels are around 0 dB.
12. Depress the PEAK I or II button to set the FL digital bar meter to indicate peak levels.
    * The PEAK I or II indicator will light.
13. Adjust the REC BALANCE and the REC LEVEL controls so that the peak levels read up to, but not exceed +7 dB.
    * Refer to III. SETTING THE RECORDING LEVELS on page 11.
14. Set the source equipment to play back from the beginning.
15. Depress the Play (▶) button and the GX-F91 will go into recording mode.
16. To stop recording, depress the Stop (■) button.

• AUTO MONITOR SELECTOR AND 3-HEAD SYSTEM

3-head system has 3 independent heads (one for recording, one for playback and another for erasing) and 2 amplifiers (one for recording and another for playback). Such system allows for comparison of the just recorded signals with the source signals. By setting the AUTO MONITOR selector to TAPE, the just recorded signals can be monitored. By setting it to SOURCE, the source signals can be monitored. Use the AUTO MONITOR selector to obtain good recording results. The AUTO MONITOR selector automatically sets itself to TAPE during recording and playback modes and to SOURCE during recording standby mode.

• TO TEMPORARILY STOP RECORDING AND AUTO MUTE SYSTEM

* When recording is stopped temporarily, the AUTO MONITOR will automatically set itself to play back source signals.

A) **To temporarily stop recording** ..... depress the REC/PAUSE button

B) **To create 4 seconds of blank space, then go into recording standby mode** .. depress the AUTO MUTE button

C) **To fade-out, then go into recording standby mode**..... depress the AUTO FADER button

To resume recording, depress the PLAY (▶) button whose indicator is flashing on and off.

* In case of fade-in, depress the AUTO FADER instead of the PLAY (▶) button.

ENGLISH

RECORDING

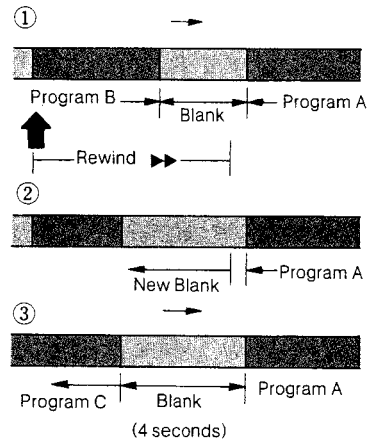
• RECORDING CANCEL SYSTEM

When the REC CANCEL button is depressed during recording, the deck will rewind the tape to the beginning of the section that was being recorded and then go into recording standby mode after creating 4 seconds of blank space.

* There must be a blank space of 4 seconds before the beginning of the section for the Recording Cancel System to detect. Use the AUTO MUTE button to create this necessary blank space.

Note concerning Recording Cancel System:

In some recordings like classics, there may be breaks of 4 seconds or more during a selection or there may be some parts where the sound is very low for 4 seconds or more. Such sections may be detected as blank spaces during recording cancel operations.



Depress the REC CANCEL button anytime during recording (arrow in illustration).

The deck will rewind the tape to near the beginning of the blank space.

The deck will create 4 seconds of blank space and then go into recording standby mode.

Depress the Play (▶) button to begin recording.

• ADDED ON RECORDING

During playback mode, depress the Play (▶) button whose indicator is lit and the REC/PAUSE button simultaneously and GX-F91 will go into recording standby mode without stopping the tape travel.

* Confirm that the cassette's recording defeat tabs are intact and if they are broken, cover the holes with pieces of adhesive tape.

III. SETTING THE RECORDING LEVELS

To enjoy good playback, the tape must be recorded in a way which will utilize the full characteristics of the tape. To obtain good signal-to-noise ratio and dynamic range, set the recording levels as high as possible. However, distortion will be added if the levels are too high, and if the levels are too low, tape noise such as tape hiss will become noticeable. As the recording levels should be set according to the music source and the type of tape used, set the recording levels by using the Maximum Input Level (MIL) indicators (interconnected with the auto tape selector) and by setting the FL digital bar meter to show the VU levels and then the peak levels.

BASIC WAY TO SET THE RECORDING LEVELS

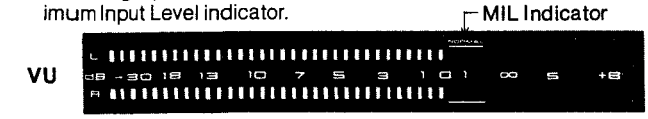
* Also follow this procedure when using the dynamic compensation system.

• VU levels will be the basis, so depress the VU button to turn the FL digital bar meter into a VU meter.

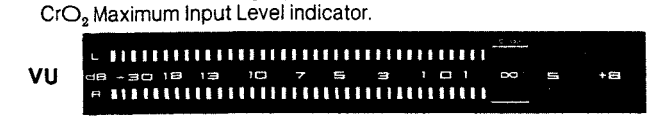
1. When using tapes for NORMAL position, adjust the REC LEVEL and REC BALANCE controls so that VU levels are around 0 dB.
2. Depress the PEAK I or II button to turn the FL digital bar meter into a peak meter.
3. Adjust the REC LEVEL control so that the peak levels are around +7 dB.

The FL digital bar meter changes with each tape position in a way shown below so that good recording levels can be set. The recording levels should be set according to the music source and the type of tape. Therefore, please keep in mind what is shown below.

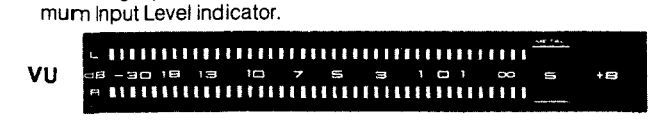
A) When using tapes for NORMAL position, adjust so that the maximum recording input levels do not reach the line under the NORMAL Maximum Input Level indicator.



B) When using tapes for CrO_2 (chrome oxide) position, adjust so that the maximum recording input levels do not reach the line under the CrO_2 Maximum Input Level indicator.



C) When using tapes for METAL position, adjust so that the maximum recording input levels do not reach the line under the METAL Maximum Input Level indicator.



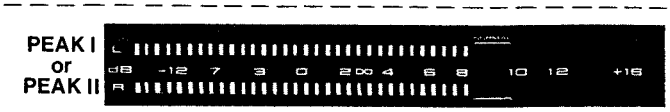
Dynamic Range Compensation (D.COMP) System

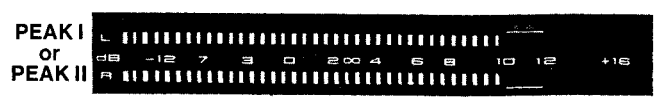
Generally, the performance of tapes is such that higher the frequency, lower the saturation level. Thus at high frequencies, the maximum input levels should be low. Also conventional meter indicates the level of recording input signals regardless of the frequencies and thus when recording live or classical music which has high frequency parts, the recording levels had to be set at slightly lower level and also a little bit of the music had to be recorded and played back to make sure that the recording levels were set properly.

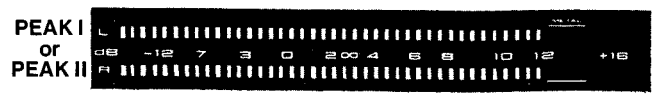
With the dynamic range compensation system, a meter can compensate according to the Maximum Output Level (MOL) (i.e. dynamic range) characteristic of each tape position. As a result, by using the Maximum Input Level (MIL) indicators, you can observe the levels indicated on the meter and set the recording input levels which will bring out the full characteristics of tape.

• **Response time of peak and VU meters**

The peak meter indicates the peak (maximum) levels of input signal and the VU meter indicates the average value of input signal. As the listening characteristics of man is close to that of an average value of sound volume, many audio equipment such as mixing amplifier, tape deck, broadcast equipment use VU meters. The peak meter has a response time of 10 msec against 300 msec for VU meter. Response time is the time it takes for a sudden input of 0 dB signal to indicate nearly (99%) the 0 dB level of meter.



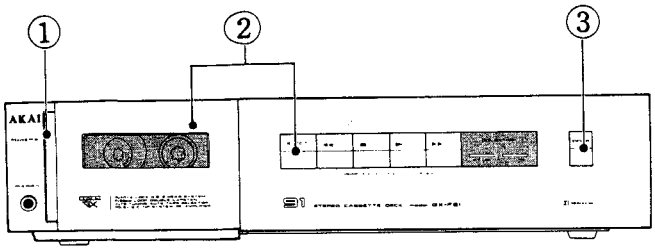


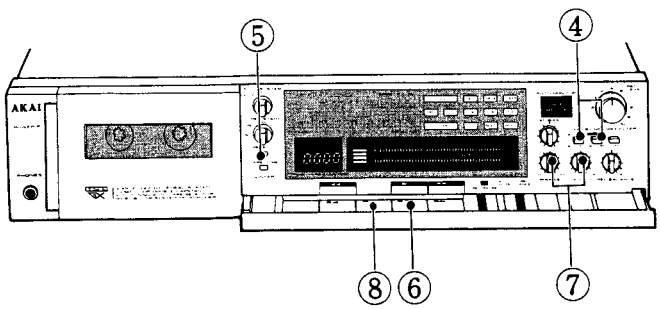


PLAYBACK

Confirm before operation:

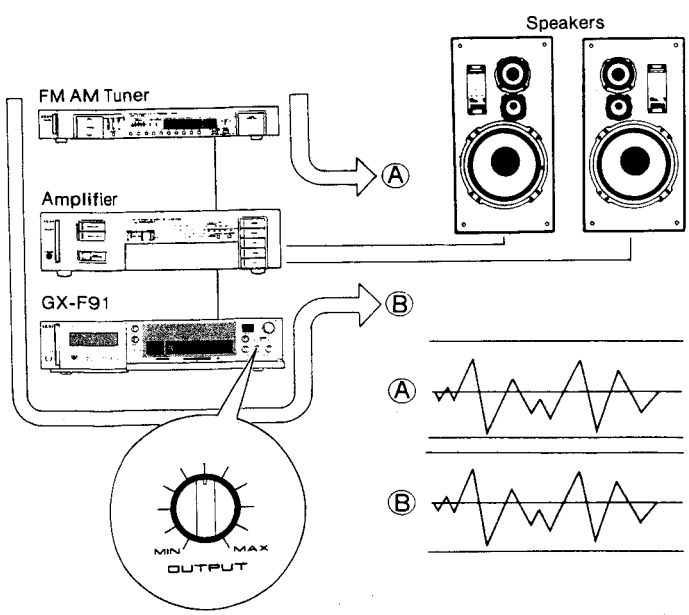
- All the components are properly connected.
- The TIMER START selector is set to OFF.
- The MPX FILTER switch is turned OFF (▙).
- The cassette tape's recording defeat tabs are broken.
- If the REC/PAUSE button is depressed during playback, the GX-F91 will go into recording standby mode.





1. Depress the POWER switch to turn on the power.
2. Depress the EJECT button and load the pre-recorded tape.
3. Depress the Opening DOOR button to open the control panel door.
4. If the tape was recorded with Dolby NR, turn ON (▬) the DOLBY NR switch and set the DOLBY NR selector to the position it was set during recording.
   * If the tape was recorded with conventional DOLBY NR, set the DOLBY NR selector to B-TYPE.
5. Depress the RESET button to reset the digital display to '0000' for easy tape indexing.
6. Depress the Play (▶) button.
   The Cassette Receptacle will close; if there is any tape slack, it will be taken up, and the GX-F91 will go into the playback mode.
7. Adjust the OUTPUT control.
   * Refer to HOW TO ADJUST THE OUTPUT CONTROL.
   If listening through headphones, adjust the PHONES control.
8. To stop playback, depress the Stop (■) button.

HOW TO ADJUST THE OUTPUT CONTROL



When an external amplifier is employed, it is necessary to match the line output level of the GX-F91 to the playback level of the external amplifier so that when a tape is played back the amplifier's volume control need not be readjusted.

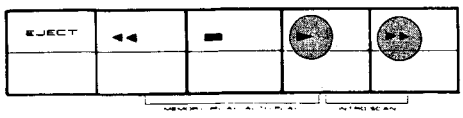
1. Consider the listening level of FM broadcast through the amplifier as standard.
2. Playback a prerecorded tape.
3. Set the Monitor selector of the amplifier to Tape and listen to the tape.
4. If the listening level is different from that of the standard listening level, adjust the GX-F91's OUTPUT control.
5. Set the Monitor selector of the amplifier to Source and listen to the standard listening level.
6. If the listening level from the tape is still different from the standard listening level, adjust the GX-F91's OUTPUT control again.
7. Repeat steps 3 to 6 until there is no difference.

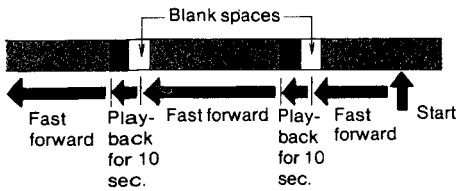
ENGLISH

AUTO SYSTEMS

The Intro Scan system and the IPLS detect the beginning of selection by the volume level and the time constant (the length of silence). For this reason, the intervals between each selection must be at least 4 seconds long. During recording, use the AUTO MUTE button to create these necessary blank spaces.

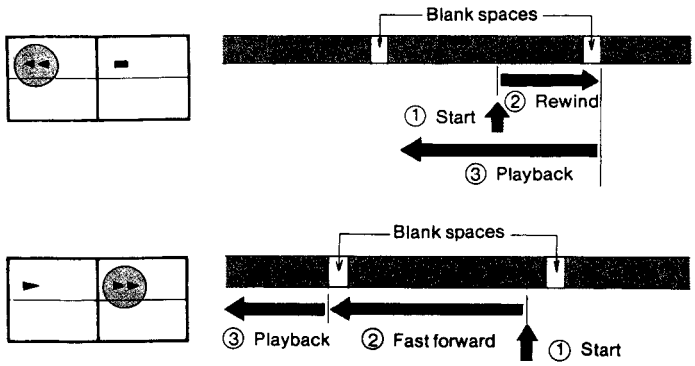
A. Intro Scan





1. Any time during playback, depress the Play (▶) and Fast Forward (▶▶) buttons simultaneously.
   * The GX-F91 will fast forward the tape until it encounters a blank space. Then it will automatically play back the tape for 10 seconds. After playing back for 10 seconds, it will fast forward the tape to the next blank space and then go into another 10 seconds of playback, and so on until the end of the tape.
   * To stop intro scan operation, depress the Stop (■) button.
2. When the desired selection is played back, depress the Play (▶) button to resume normal playback.

B. IPLS (Instant Program Locating System)



1. Set the AUTO SYSTEM selector to IPLS.
2. Any time during playback, depress the Rewind (◀◀) button.
   * The GX-F91 will rewind the tape to the beginning of the selection and then begin playback automatically.

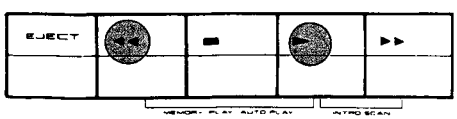
   Any time during playback, depress the Fast Forward (▶▶) button.
   * The GX-F91 will fast forward the tape to the beginning of the next selection and then begin playback automatically.

Notes on Intro Scan and IPLS

In some recordings like classics, there may be breaks of 4 seconds or more during a selection or there may be some parts where the sound is very low for 4 seconds or more. Such sections may be detected as blank spaces between selections.

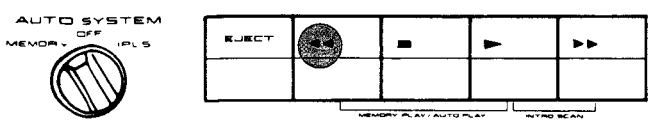
With some live recordings, there may be applause between the selections. Such sections will not be detected as blank spaces between selections.

C. AUTO PLAY



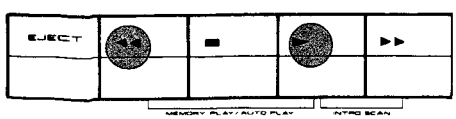
When the Play (▶) and Rewind (◀◀) buttons are depressed simultaneously, the GX-F91 will rewind the tape to the beginning of the tape and then begin playback automatically.

D. MEMORY STOP



1. During playback or recording, depress the RESET button and reset the digital display to '0000'.
2. Set the AUTO SYSTEM selector to MEMORY.
3. Depress the Rewind (◀◀) button.
   * The GX-F91 will rewind the tape to near '9999' and stop.

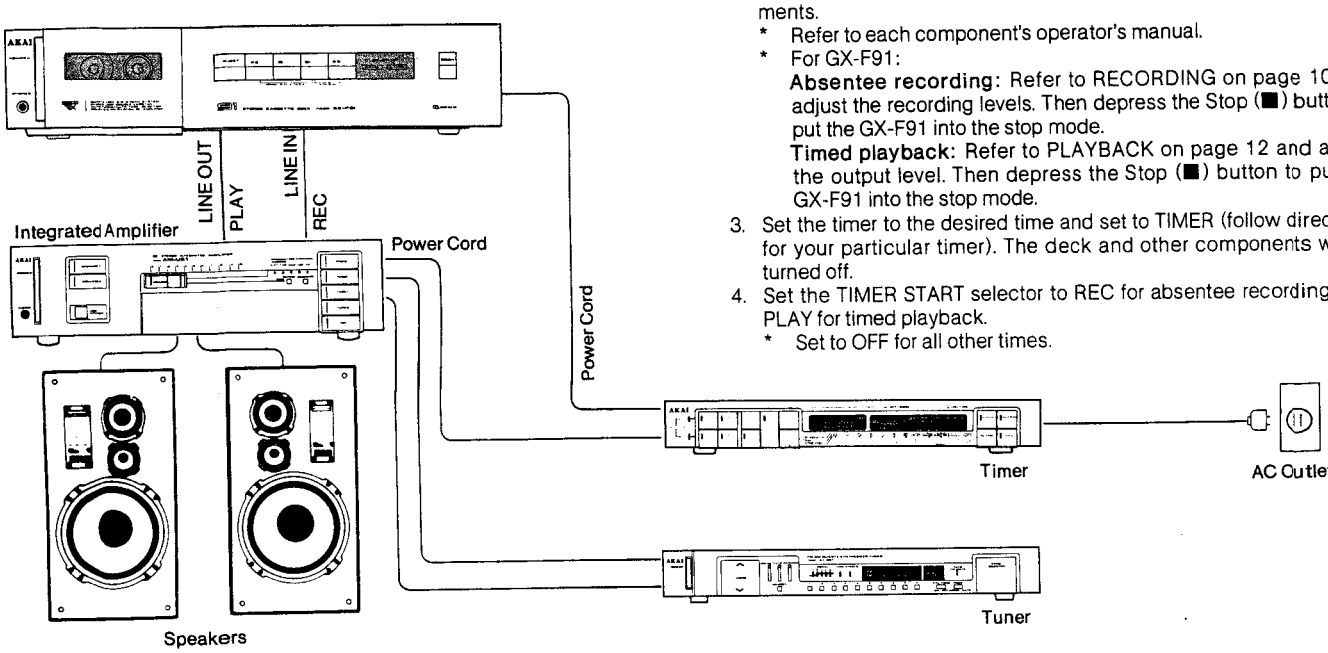
E. MEMORY PLAY



Proceed as in Memory Stop but in step 3, depress the Play (▶) and Rewind (◀◀) buttons simultaneously.

* The GX-F91 will rewind the tape to near '9999' and then begin playback automatically.

ABSENTEE RECORDING AND TIMED PLAYBACK

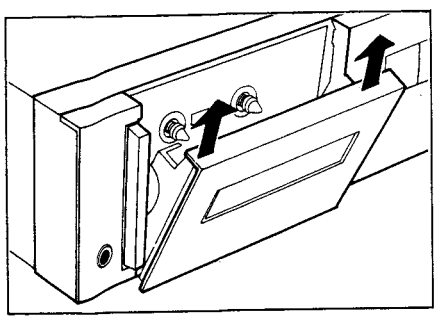


1. Set the timer to OFF (or similar mode: follow directions for your particular timer) when connecting the deck and other components.
2. Turn on all the components connected to the timer and make adjustments.
   * Refer to each component's operator's manual.
   * For GX-F91:
   Absentee recording: Refer to RECORDING on page 10 and adjust the recording levels. Then depress the Stop (■) button to put the GX-F91 into the stop mode.
   Timed playback: Refer to PLAYBACK on page 12 and adjust the output level. Then depress the Stop (■) button to put the GX-F91 into the stop mode.
3. Set the timer to the desired time and set to TIMER (follow directions for your particular timer). The deck and other components will be turned off.
4. Set the TIMER START selector to REC for absentee recording or to PLAY for timed playback.
   * Set to OFF for all other times.

MAINTENANCE

After opening the Cassette Receptacle with the EJECT button, depress the POWER switch to turn off the power.

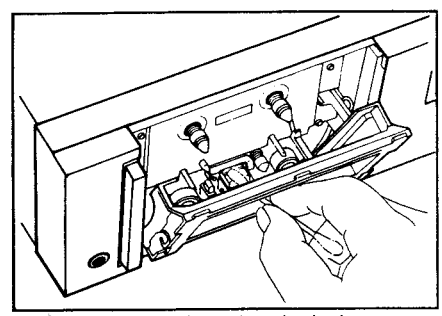
1. REMOVING THE RECEPTACLE LID



The receptacle lid can be removed by lifting the lid up.

* Be sure to use both hands.

2. HEAD CLEANING

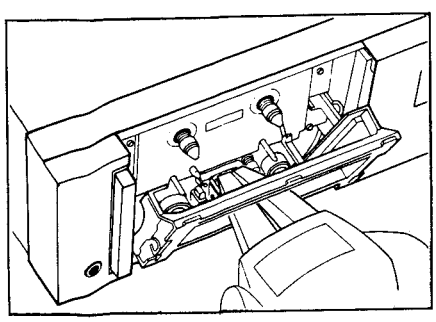


Clean the heads with a cotton swab stick which has been dipped in Akai Cleaning Fluid (Akai Cleaning Kit HC-550P). Also clean the pinch wheel, the capstan, and other parts over which the tape travels.

* If Akai Cleaning Fluid is not available, use alcohol.

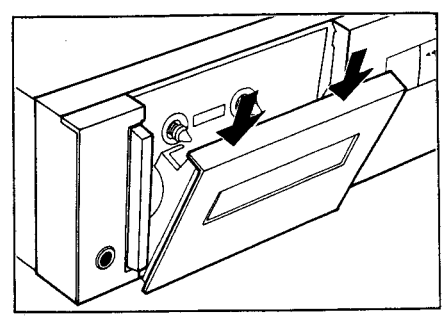
Do not use other chemical cleaners as the rubber parts will deteriorate.

3. HEAD DEMAGNETIZING



The steel pole pieces which form part of the recording and playback heads become slightly magnetized after several recording and playback hours and as a result, the tape is partially erased at high frequencies. Therefore, head demagnetizing is recommended periodically.

4. REPLACING THE RECEPTACLE LID



To replace the lid onto the holder, slide down the lid over the holder.

* Do not insert a cassette tape with the receptacle lid off.
* The receptacle lid is properly attached when it is even with the front and top panels.

TROUBLE SHOOTING

The conditions listed below do not indicate mechanical failure of your unit. If your machine exhibits any of these conditions, check for trouble as indicated.

EJECT button will not function
* Power is not being supplied. Turn on the power.

Recording button will not function
* Cassette is not loaded.
* Recording defeat tabs are removed. Plug or cover cavities.

Tape will not run
* Power is not being supplied. Check power cord and POWER switch.
* Tape slack. Take up slack as mentioned in "Cassette Tape Care".

Auto tape tuning will not take place
* Deck not in stop mode. Depress the Stop (■) button.
* Recording defeat tabs are removed. Plug or cover cavities.

Noisy Sound
* Heads are dirty. Clean following head cleaning instructions.
* Heads are magnetized. Demagnetize following head demagnetizing instructions.

Previous recording will not erase
* Erase head dirty. Clean following head cleaning instructions.

Distorted sound
* Recording level is too high. Set as explained under Recording.

Playback cannot be effected
* Connections are incorrect.
* Controls are not properly adjusted or positioned. Check external amplifier controls.
* REC/PAUSE button is depressed.

Recording will not take place
* Dirty head. Clean following head cleaning instructions.
* Connections are incorrect.
* Controls are not properly positioned or adjusted. Check external source controls.
* Deck in recording standby mode.

The correct indicator will not light when chrome or metal position tape is loaded
* Old cassette used. Use a new cassette with notches for triggering its tape position.

IPLS, REC CANCEL and Intro Scan will not take place properly
* Blank spaces not 4 seconds long. Use the AUTO MUTE button to create the blank spaces.

Tape stops or plays back during fast forward or rewind
* AUTO SYSTEM selector set to MEMORY or IPLS. Set to OFF.

Should there be a problem with your machine, write down the model and serial numbers and all pertinent data regarding warranty coverage as well as a clear description of the existing trouble and contact your nearest authorized Akai Service Station or the Service Department of Akai Electric Company, Tokyo, Japan.

SPECIFICATIONS

Track System ..... 4 Track 2 Channel Stereo System
Tape ..... Philips Type Cassette
Tape Speed ..... 4.76 cm/s ±1.0% (1-7/8 ips. ±1.0%)
Heads ..... Super GX head for recording × 1
Super GX head for playback × 1
Erase head × 1
Motors ..... Quartz Locked PLL servo D.C. motor for direct capstan drive × 1
D.C. motor for reel drive × 1
Wow & Flutter ..... 0.07% WTD (DIN)
0.025% WRMS
Tape Winding Time ..... 90 sec. using a C-60 cassette tape
Frequency Response ..... Normal: 20 to 18,000 Hz±3 dB (−20 VU)
CrO_2: 20 to 19,000 Hz±3 dB (−20 VU)
Metal: 20 to 21,000 Hz±3 dB (−20 VU)
Frequency Range ..... Normal: 15 to 19,000 Hz
CrO_2: 15 to 21,000 Hz
Metal: 15 to 23,000 Hz
Signal to Noise Ratio ..... Metal: Better than 60 dB (measured via tape with peak recording level)
Dolby B-type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz
Dolby C-type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
Harmonic Distortion ..... 1 kHz, 3rd harmonic distortion
Metal: Less than 0.8%

Input ..... Line: 70 mV (input impedance: 47 kohms)
Output ..... Line: 410 mV at 0 VU
Required load impedance: more than 20 kohms
Phone: 1.3 mW/8 ohms at 0 VU
DIN ..... Input: 2.0 mV (input impedance: 10 kohms)
Output: 410 mV
Required load impedance: more than 20 kohms
Power Requirements ..... 120V, 60 Hz for USA and Canada
220V, 50 Hz for Europe except UK
240V, 50 Hz for UK and Australia
110V/120V/220V/240V, 50/60 Hz switchable for other countries.
Dimensions ..... 440(W) × 100(H) × 363(D)mm (17.3 × 3.9 × 14.3")
Weight ..... 9.8 kg (21.6 lbs)

STANDARD ACCESSORY
Connection Cords ..... 1 set

* For improvement purposes, specifications and design are subject to change without notice.
* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories Licensing Corporation.
(Manufactured under license from Dolby Laboratories Licensing Corporation.)

ENGLISH

TROUBLE SHOOTING

The conditions listed below do not indicate mechanical failure of your unit. If your machine exhibits any of these conditions, check for trouble as indicated.

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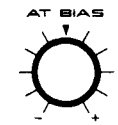
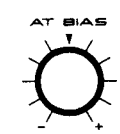
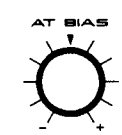
MEMORY CHART

Tape Position	Memory Button	Tape Brand and Length	AT BIAS Control	DOLBY NR.
NORMAL	M1	Brand Length C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M2	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M3	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M4	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
CrO_2	M1	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M2	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M3	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M4	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
METAL	M1	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M2	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M3	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE
	M4	C-		☐ OFF ☐ C-TYPE ☐ B-TYPE